NEW YORK
STATEWIDE COMMUNICATION INTEROPERABILITY PLAN

NOVEMBER 2019

Developed with Support from the
Cybersecurity and Infrastructure Security Agency, Emergency Communications Division

DRAFT – INTERNAL WORKING DOCUMENT

LETTER FROM THE STATEWIDE INTEROPERABILITY COORDINATOR

Greetings,

I am pleased to provide to you the 2019 New York Statewide Communication Interoperability Plan (SCIP). This SCIP represents New York's continuous commitment to improving emergency communications interoperability and supporting our public safety practitioners throughout the state. In addition, this update meets the requirement of the recently released Fiscal Year 2019 Department of Homeland Security (DHS) grant guidelines.

New York State has embarked in a newer process with the Emergency Communication Division (ECD) to facilitate a virtual SCIP process to allow the state a webinar-style structure to allow for fuller representation of stakeholders that otherwise would not be able to join an in-person workshop. Representatives from relevant New York State public safety agencies and local governmental organizations have participated in this virtual style SCIP Workshop through accomplishing focused webinars on Governance, Technology, and Sustainability Funding to update the SCIP with actionable and measurable goals and objectives with owners and timelines assigned. These goals and objectives are designed to support our state in planning for new technologies and navigating the ever-changing emergency communications ecosystem.

With the virtual webinar structure, our state was able to create the SCIP prior to conducting an in-person meeting to allow participants to review and ensure accuracy of goals and objectives without as much of a time constraint as has been in the past. We hope this process has created a more accurate depiction of where the state falls in emergency communications and necessary action needed to further our interoperability.

As we continue to enhance interoperability, we must remain dedicated to improving our ability to communicate among disciplines and across jurisdictional boundaries. With help from public safety experts statewide, we will work to achieve the goals set forth in this SCIP and become a nationwide model for interoperability.

Sincerely,

Michael Sprague
New York Statewide Interoperability Coordinator

TABLE OF CONTENTS

INTRODUCTION

The New York Statewide Communications Interoperability Plan (SCIP) is a stakeholder-driven, multi-jurisdictional, and multi-disciplinary strategic plan to enhance interoperable and emergency communications over the next one to three years. This document contains the following planning components:

- Introduction – Provides the context necessary to understand what the SCIP is and how it was developed.
- Interoperable and Emergency Communications Overview – Provides an overview of New York's current and future emergency communications environment.
- Vision and Mission – Articulates New York's one-to-three-year vision and mission for improving emergency communications operability, interoperability, and continuity of communications at all levels of government.
- Goals and Objectives – Outlines the goals and objectives aligned with the vision and mission of the SCIP as they pertain to Governance, Technology and Funding.
- Implementation Plan – Describes New York's plan to implement, maintain, and update the SCIP and enable continued evolution of and progress toward New York's interoperability goals.

The Emergency Communications Ecosystem consists of many inter-related components and functions, including communications for incident response operations, notifications and alerts and warnings, requests for assistance and reporting, and public information exchange. The

primary functions are depicted in the 2019 National Emergency Communications Plan (NECP)[1]. The 2019 update to the NECP can be found at the link below.

The Interoperability Continuum, developed by the Department of Homeland Security's SAFECOM program and shown in Figure 1, serves as a framework to address challenges and continue improving operable/interoperable and public safety communications. It is designed to assist public safety agencies and policy makers with planning and implementing interoperability solutions for communications across technologies. More information on the Interoperability Continuum is available in the Interoperability Continuum brochure.[2]

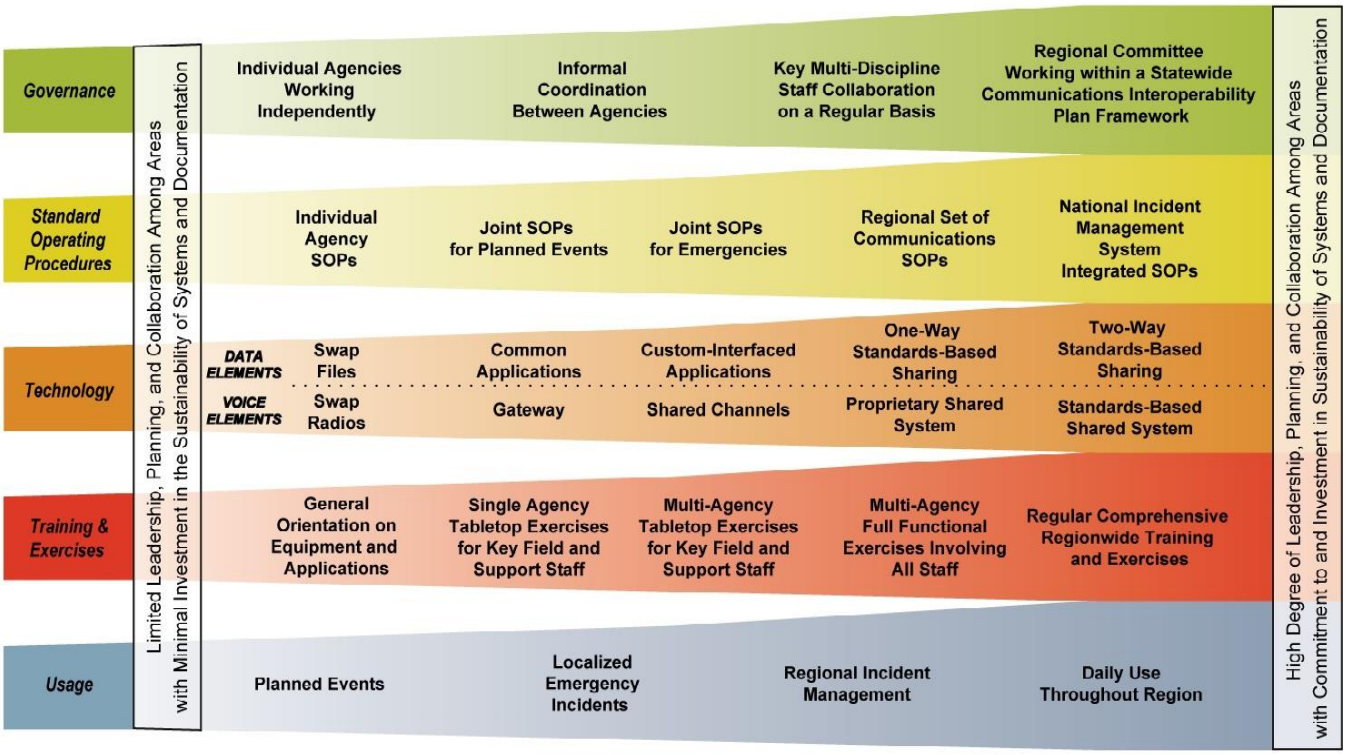


Figure 1: SAFECOM Interoperability Continuum

INTEROPERABLE AND EMERGENCY COMMUNICATIONS OVERVIEW

Reliable, timely communications among public safety responders and between public safety agencies and citizens is critical to effectively carry out public safety missions, and in many cases, saving lives.

Traditional voice capabilities, such as land mobile radio (LMR) and landline 9-1-1 services have long been and continue to be critical tools for communications. However, the advancement of internet protocol (IP) based technologies in public safety, has increased the type and amount of information responders receive, the tools they communicate with, and complexity of new and interdependent systems. New technologies increase the need for coordination across public safety disciplines, communications functions, and levels of

[1] The 2019 NECP is available here

[2] The Interoperability Continuum brochure is available here

government to ensure emergency communications capabilities are interoperable, reliable, and secure.

An example of this evolution is the First Responder Network Authority's (FirstNet) implementation of the Nationwide Public Safety Broadband Network (NPSBN). All 56 states and territories, including New York State, have opted into FirstNet. With this new system, agencies can supplement existing LMR capabilities with improved spectrum, broadband capabilities, and the means to move and transfer data as never before. Its adoption and implementation will entail close coordination with dispatch supervisors, LMR systems managers and managers of alert and warning systems to ensure interoperability and cybersecurity are not sacrificed as agencies begin adopting wireless cellular devices for daily operations.

While the enhancement of current capabilities and the potential for integration of emerging technologies is tremendous, interfacing systems along with governance, standard operating procedures and training are necessary to fully realize these benefits and ensure the security of information are all key elements to successful implementation.

VISION AND MISSION

This section describes New York's vision and mission for improving emergency communications operability, interoperability, and continuity of communications statewide:

Vision:

To ensure emergency responders can effectively communicate during day-to-day operations, significant events, and disasters to protect lives and property.

Mission:

To implement our vision of effective interoperable and emergency communications, the New York State Interoperable and Emergency Communication (SIEC) Board will continue to develop and support communications partnerships inclusive of local, state, tribal, and Federal public safety agencies, through the efficient development and use of communication resources, policies, procedures, training, and exercises.

GOVERNANCE

Statewide Interoperable and Emergency Communications (SIEC) Board

The Governance section of the SCIP outlines the future direction of the New York governance structure for interoperable and emergency communications.

New York State County Law, Article 6-A, Section 326, created the State Interoperable and Emergency Communication Board (SIEC Board) within the Division of Homeland Security and Emergency Services (pursuant to Chapter 56 of the Laws of 2010). Section 328 of the New York State County Law, charged this Board with the following duties:

- Make recommendations to the Commissioner of the Division of Homeland Security and Emergency Services on the expenditure of grants and other funding programs related to interoperable and emergency communications;
- Make recommendations related to the development, coordination and implementation of policies, plans, standards, programs and services related to interoperable and emergency communications, including but not limited to ensuring compliance with federal mandates for interoperable communications and compatibility with the national incident management system;
- Establish structures and guidelines to maintain interoperable communications planning and coordination at the statewide level;
- Establish, promulgate and revise standards for the operation of public safety answering points; and
- Establish guidelines regarding the creation of regionally based radio communications systems compatible with the structures and guidelines consistent with federal mandates and best practices.

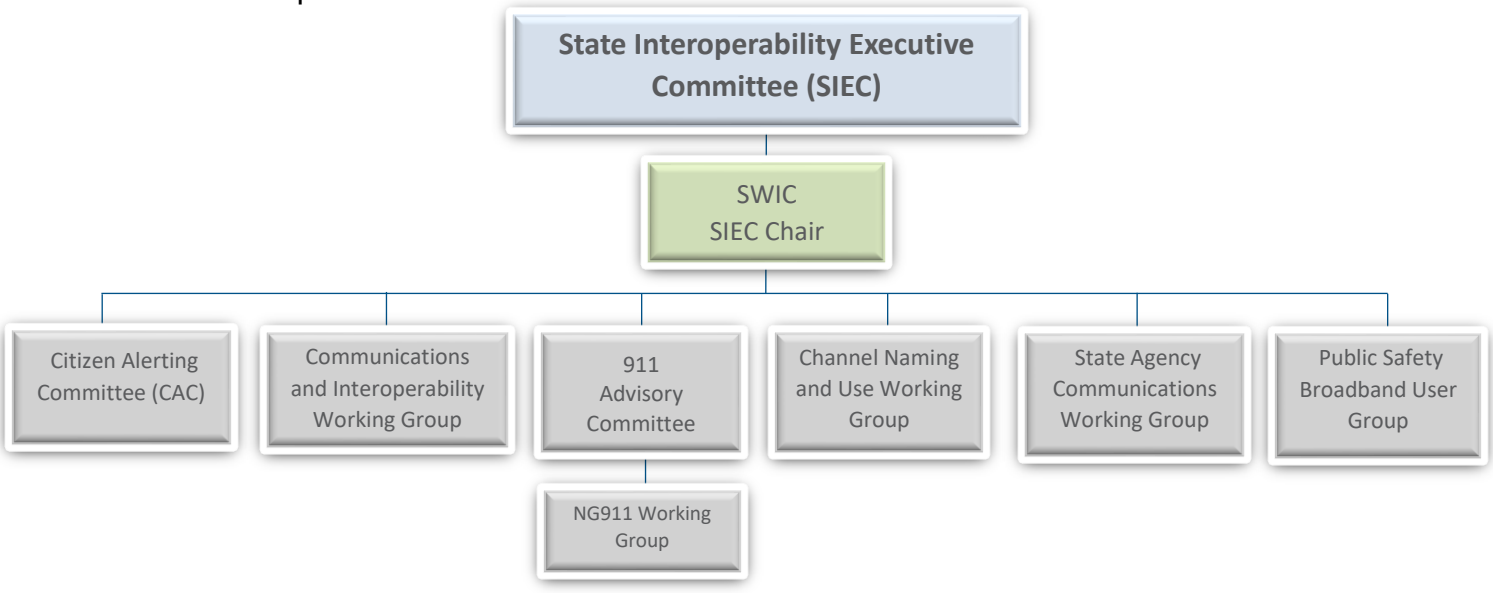


Figure 2: Emergency Communications Governance in New York

The following table outlines goals and objectives related to Governance:

Governance	
Goals	**Objectives**
1. Development and implementation of the State 9-1-1 Plan	1.1 Engage stakeholders
	1.2 Assign resources to the plan
	1.3 Determine scope
	1.4 Adoption and implementation of the plan
	1.5 Continued evaluation and revision
2. Development of the Communications Unit (COMU) Program	2.1 Credential personnel in all COMU positions
	2.2 Provide training and exercises in all COMU positions
	2.3 Institutionalize the COMU Program and promote the Communication Assets Survey and Mapping Tool (CASM)
	2.4 Expand COMU Program to encompass Emergency Management Assistance Compact (EMAC)
	2.5 Continued evaluation and revision of policies and procedures annually
3. Developing governance for the integration of public safety broadband communications	3.1 Engaging broadband providers
	3.2 Determine governance needs

	3.3 Education and outreach to the public safety community through the consortiums

TECHNOLOGY

Land Mobile Radio

Currently, the state of New York operates off a “network of networks” for their land mobile radio needs. There is a desired to integrate the regional systems to bridge over to a statewide system instead of having the current issue with them bumping up against each other. The state currently is involved with an interoperable communications grant to be able to coordinate usage through the state and working through challenges not only with intra-state communications, but also with cross border capabilities with Canadian partners.

With the need for an integrated network of networks, there is also the desire to have trained communications operators statewide and processes and procedures in place to ensure sustainment of the communications infrastructure. Continued coordination through the state’s Consortiums and the Communications Consortium Chairs (C3) will allow the state to have a smoother transition to integrated communications capabilities for first responders.

Mobile Broadband

Within the next five years, there will be enough coverage within New York state to utilize public safety broadband to augment the current LMR system. There is still the need for increased speed and capacity to support those public safety needs and ensure proper security protocols. New York is looking towards a robust infrastructure with redundant backhaul and resiliency to provide proper mobile broadband coverage to public safety as well as interoperability of applications among all devices involved in the emergency communications efforts.

Current concerns surround the continued availability of T-Band frequencies, and frequency coordination and usage near the United States – Canadian Border. The state of New York and specifically New York City relies on 470-512 Megahertz (MHz) as part of T-Band Spectrum and there is a major threat to continued use in recent legislation. There are also concerns with LMR and broadband coordination, to include roaming agreements between the United States and Canada in order to have operable and interoperable communications with cross border partners.

9-1-1

New York is looking towards a potential 9-1-1 solution comprised of regional ESInets (Emergency Services IP Network) or a single resilient system. Through endeavors to reach a Next Generation 9-1-1 (NG9-1-1) capable network, the state is conducting efforts for data interoperability among Computer Aided Dispatch (CAD) systems and Records Management Systems (RMS) as well as enhancing Geographic Information Systems (GIS) framework capabilities across the state through the seamless sharing of data layers and real time location-based information. These capabilities will help align public safety better with Public Safety Answering Point (PSAP) operators to aid in emergency situations.

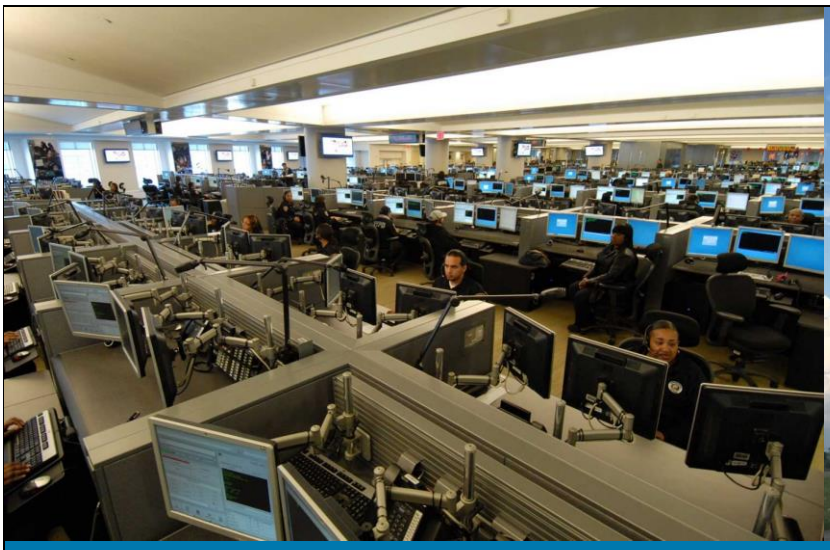
Roadblocks for New York related to 9-1-1 are related to the migration of 9-1-1 technology to an unregulated industry (IP based versus wirelines) and the cyber impacts and distributed-denial-of-service attacks (DDOS) attacks on 9-1-1 systems beginning to rise.

Alerts and Warnings

Alerts and Warnings (A&W) is an area in which the state of New York is seeking to create a more defined program for better understanding and utilization of during emergency situations. New York seeks to create a more effective documentation process to inform and control message origination and distribution throughout the state and to be able to coordinate those alerting plans and procedures for neighboring jurisdictions. Falling back to the above conversation about an integrated network of networks, there is a desire to insert the alerting protocols into the same conversation to ensure regional coordination and alerting proficiency.

With the mechanism for A&W changing, operators and alert originators need to receive periodic structured training and the message origination distribution and correction procedures need to be firmly in place. The system can only be as effective as the policies, procedures, and protocols in place to ensure successful and timely dissemination.

The following table outlines goals and objectives related to Technology:



Technology	
Goals	**Objectives**
4. Develop a network of networks of systems approach to gain interoperability within the emergency communications ecosystem	4.1 Update and promote statewide standards, guidelines, and resources (Tactical Interoperable Communications Plan [TICP], CASM, New York State Tactical Interoperable Communications Field Operations Guide [NYS-TICFOG])
	4.2 Promote the interoperability channel plan

	4.3 Coordinate with Consortium Communications Chairs (C3) and Consortiums
5. Establish requirements and prepare the state to interface with merging and emerging technologies	5.1 Develop and implement 9-1-1 Plan
6. Improve communications infrastructure resiliency in New York (LMR, Broadband, NG9-1-1)	6.1 Continue with LMR Grant Program
	6.2 Work in conjunction with carriers
	6.3 Develop, adopt and implement practices and standards for cybersecurity across all forms of communication
7. Enhance outreach, education and partnerships	7.1 Continue education, training and exercise for COMU personnel statewide
	7.2 Partner with academia on telecommunications degree program
	7.3 Maintenance of the SCIP
	7.4 Continue credentialing and deployment of COMU personnel for planned and unplanned events
	7.5 Provide outreach program
8. Establish and maintain a schedule for systematic training and exercise of statewide communications resources (strategic reserve [STR]/cache)	8.1 Regular testing of interoperable and operable communications resources (manuals, equipment, personnel contacts, Field Operations Guides [FOGs])
	8.2 Submission of After-Action Reports

SUSTAINABILITY FUNDING

Stakeholders in New York are eager to secure sustainable funding to support new, on-going, and future efforts across the state's entire communications ecosystem. The state currently is successfully utilizing a variety of grants and wish to continue to have a healthy funding stream from the Statewide Interoperable Communications Grant (SICG) grant program. The state is seeking to ensure all relevant New York State Disaster Preparedness Commission (DPC) agencies and first responders have the resources, technology and service availability with refreshment programs for seamless interoperability and continuity of operations.

The lack of enough funding to meet interoperable communications challenges related to the evolution of equipment and refreshment of existing systems infrastructure and end-user equipment is a hurdle in which New York wishes to apply strategic processes and firm goals. The New York State Police (NYSP) is one group that has advised their equipment is nearing

end of lifecycle and the continued funding necessary is a big discussion point. With system upgrades, the state will keep in mind the need for cybersecurity funding to mitigate breaches and ensure continuity of operations and address needs through the documentation and tracking of the evolution of the networks.

The following table outlines goals and objectives related to Sustainability Funding:

Sustainability Funding	
Goals	**Objectives**
9. Promote and maintain the SICG Program to ensure support of current and evolving interoperable technologies and programs	9.1 Continue to evaluate allowable costs and associated maintenance (e.g., governance, training, CASM usage, TICP updates, open standards, 9-1-1) for future rounds
	9.2 Monitor the SICG Program to ensure it meets current and emerging needs of public safety
10. Identify and document long-term funding for State communications systems and assets (e.g., operations and maintenance of existing systems, STR program, reserve funds)	10.1 Continue to identify, track, and prioritize systems and assets that are reaching end of lifecycle or require a technology refresh
	10.2 Identify agency requirements and seek to secure associated funding
	10.3 Establishing partnerships for investment in lifecycle funding
	10.4 Initiate budget request process

IMPLEMENTATION PLAN

The Statewide Interoperability Coordinator (SWIC) will be the central point of coordination for implementing the SCIP goals and objectives. These SCIP goals and objectives are intended to support the dissemination of best practices across New York and can be amended as relevant stakeholders see fit. The Emergency Communications Division (ECD) has a catalog of technical assistance service offerings available to assist in implementation of the SCIP. Requests for assistance are to be coordinated through the SWIC, Michael Sprague.

Goal	Objectives	Owner(s)	Completion Date
1. Development and implementation of the State 9-1-1 Plan	1.1 Engage stakeholders 1.2 Assign resources to the plan 1.3 Determine scope 1.4 Adoption and implementation of the plan 1.5 Continued evaluation and revision	OIEC State 9-1-1 Coordinator SIEC Board/9-1-1 Advisory Group 9-1-1 Coordinators 9-1-1 Stakeholders	December 2022
2. Development of the COMU Program	2.1 Credential personnel in all COMU positions 2.2 Provide training and exercises in all COMU positions 2.3 Institutionalize the COMU program and promote CASM 2.4 Expand COMU program to encompass EMAC 2.5 Continued evaluation and revision of policies and procedures annually	COMU Manager OIEC SPTC COMU Stakeholders C3 Group Consortiums Emergency Management/STO Counties	December 2023; Ongoing
3. Developing governance for the integration of public	3.1 Engaging broadband providers 3.2 Determine governance needs	OIEC Broadband User Group	March 2021; Ongoing

safety broadband communications	3.3 Education and outreach to the public safety community through the Consortiums	C3	
4. Develop a network of networks approach to gain interoperability within the emergency communications ecosystem	4.1 Update and promote statewide standards, guidelines, and resources (Tactical Interoperable Communications Plan [TICP], CASM, New York State Tactical Interoperable Communications Field Operations Guide [NYS-TICFOG])	OIEC C3 Consortiums Counties	Ongoing
	4.2 Promote the interoperability channel plan		
	4.3 Coordinate with C3 and Consortiums		
5. Establish requirements and prepare the state to interface with merging and emerging technologies	5.1 Develop and implement 9-1-1 Plan	OIEC SIEC Board 9-1-1 Advisory Committee NG9-1-1 WG DPS Counties	December 2022; Ongoing
6. Improve communications infrastructure resiliency in New York (LMR, Broadband, NG9-1-1)	6.1 Continue with LMR Grant Program	OIEC OCT Wireless carriers C3 Consortiums 9-1-1 Advisory Committee NG9-1-1 WG DPS Counties	Ongoing
	6.2 Work in conjunction with carriers		
	6.3 Develop, adopt and implement practices and standards for cybersecurity across all forms of communications		
7. Enhance outreach, education and partnerships	7.1 Continue education, training and exercise for COMU personnel statewide	OIEC C3	December 2022; Ongoing

	7.2 Partner with academia on telecommunications degree program	SIEC ECD Consortiums Counties	
	7.3 Maintenance of SCIP		
	7.4 Continue credentialing and deployment of COMU personnel for planned and unplanned events		
	7.5 Provide outreach program		
8. Establish and maintain a schedule for systematic training and exercise of statewide communications resources (strategic reserve [STR]/cache)	8.1 Regular testing of interoperable and operable communications resources (manuals, equipment, personnel contacts, [FOGs])	OIEC ECD C3 Consortiums State Agencies Counties	August 2020; Ongoing
	8.2 Submission of AARs		
9. Promote and maintain the SICG Program to ensure support of current and evolving interoperable technologies and programs	9.1 Continue to evaluate allowable costs and associated maintenance (e.g., governance, training, CASM usage, TICP updates, open standards, 9-1-1) for future rounds	OIEC SIEC Board C3 Consortiums	Ongoing
	9.2 Monitor the SICG Program to ensure it meets current and emerging needs of public safety		
10. Identify and document long-term funding for State communications systems and assets (e.g., operations and maintenance of existing	10.1 Continue to identify, track and prioritize systems and assets that are reaching end of lifecycle or require a technology refresh	State Agency Working Group	Ongoing
	10.2 Identify agency requirements and seek to secure associated funding		

systems, STR program, reserve funds)	10.3 Establishing partnerships for investment in lifecycle funding		
	10.4 Initiate budget request process		

APPENDIX A: NEW YORK INTEROPERABILITY MARKERS

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
Governance	1	**State-level governing body established (e.g., SIEC, SIGB).** Governance framework is in place to sustain all emergency communications	Governing body does not exist, or exists and role has not been formalized by legislative or executive actions	Governing body role established through an executive order	Governing body role established through a state law	
	2	**SIGB/SIEC participation.** Statewide governance body is comprised of members who represent all components of the emergency communications ecosystem.	Initial (1-2) Governance body participation includes: ☐Communications Champion/SWIC ☐LMR ☐Broadband/LTE ☐9-1-1 ☐Alerts, Warnings and Notifications	Defined (3-4) Governance body participation includes: ☐Communications Champion/SWIC ☐LMR ☐Broadband/LTE ☐9-1-1 ☐Alerts, Warnings and Notifications	Optimized (5) Governance body participation includes: ☒Communications Champion/SWIC ☒LMR ☒Broadband/LTE ☒9-1-1 ☒Alerts, Warnings and Notifications	
	3	**SWIC established.** Full-time SWIC is in place to promote broad and sustained participation in emergency communications.	SWIC does not exist	Full-time SWIC with collateral duties	Full-time SWIC established through executive order or state law	
	4	**SWIC Duty Percentage.** SWIC spends 100% of time on SWIC-focused job duties	SWIC spends >1, <50% of time on SWIC-focused job duties	SWIC spends >50, <90% of time on SWIC-focused job duties	SWIC spends >90% of time on SWIC-focused job duties	
	5	**SCIP refresh.** SCIP is a living document that continues to be executed in a timely manner. Updated SCIPs are reviewed and approved by SIGB/SIEC.	No SCIP OR SCIP older than 3 years	SCIP updated within last 2 years	SCIP updated in last 2 years and progress made on >50% of goals	
	6	**SCIP strategic goal percentage.** SCIP goals are primarily strategic to improve long term emergency communications ecosystem (LMR, LTE, 911, A&W) and future technology transitions (5G, IoT, UAS, etc.).	<50% are strategic goals in SCIP	>50%<90% are strategic goals in SCIP	>90% are strategic goals in SCIP	

		(Strategic and non-strategic goals are completely different; strategy -- path from here to the destination; it is unlike tactics which you can "touch"; cannot "touch" strategy)				
	7	**Integrated emergency communication grant coordination.** Designed to ensure state / territory is tracking and optimizing grant proposals, and there is strategic visibility how grant money is being spent.	No explicit approach or only informal emergency communications grant coordination between localities, agencies, SAA and/or the SWIC within a state / territory	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding but does not review proposals or make recommendations	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding and reviews grant proposals for alignment with the SCIP. SWIC and/or SIGB provides recommendations to the SAA	
	8	**Communications Unit process.** Communications Unit process present in state / territory to facilitate emergency communications capabilities. Check the boxes of which Communications positions are currently covered within your process: ☒COML ☒COMT ☒ITSL ☒RADO ☒INCM ☒INTD ☒AUXCOM ☒TERT	No Communications Unit process at present	Communications Unit process planned or designed (but not implemented)	Communications Unit process implemented and active	Procedures in place for INTD, INCM, RADO, TERT, AUXCOM, and ITSL but no process
SOP/SOGs	**9**	**Interagency communication.** Established and applied interagency communications policies, procedures and guidelines.	Some interoperable communications SOPs/SOGs exist within the area and steps have been taken to institute these interoperability	Interoperable communications SOPs/SOGs are formalized and in use by agencies within the area. Despite minor issues, SOPs/SOGs are	Interoperable communications SOPs/SOGs within the area are formalized and regularly reviewed. Additionally, NIMS procedures are well established	

			procedures among some agencies	successfully used during responses and/or exercises	among agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercises.	
	10	**TICP (or equivalent) developed.** Tactical Interoperable Communications Plans (TICPs) established and periodically updated to include all public safety communications systems available	Regional or statewide TICP in place	Statewide or Regional TICP(s) updated within past 2-5 years	Statewide or Regional TICP(s) updated within past 2 years	
	11	**Field Operations Guides (FOGs) developed.** FOGs established for a state or territory and periodically updated to include all public safety communications systems available	Regional or statewide FOG in place	Statewide or Regional FOG(s) updated within past 2-5 years	Statewide or Regional FOG(s) updated within past 2 years	
	12	**Alerts & Warnings.** State or Territory has Implemented an effective A&W program to include Policy, Procedures and Protocol measured through the following characteristics: (1) Effective documentation process to inform and control message origination and distribution (2) Coordination of alerting plans and procedures with neighboring jurisdictions (3) Operators and alert originators receive periodic training (4) Message origination, distribution, and correction procedures in place	<49% of originating authorities have all of the four A&W characteristics	>50%<74% of originating authorities have all of the four A&W characteristics	>75%<100% of originating authorities have all of the four A&W characteristics	Moving forward with State OEM, trying to develop a program
Technology	**13**	**Radio programming.** Radios programmed for National/Federal, SLTT interoperability channels and channel nomenclature consistency across a state / territory.	<49% of radios are programed for interoperability and consistency	>50%<74% of radios are programed for interoperability and consistency	>75%<100% of radios are programed for interoperability and consistency	

	14	**Cybersecurity Assessment Awareness.** Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 911, and A&W)	Public safety communications network owners are aware of cybersecurity assessment availability and value (check yes or no for each option) ☒LMR ☒LTE ☒9-1-1/CAD ☒A&W	Initial plus, conducted assessment, conducted risk assessment. (check yes or no for each option) ☐LMR ☐LTE ☐9-1-1/CAD ☐A&W	Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option) ☐LMR ☐LTE ☐9-1-1/CAD ☐A&W	
	15	**NG911 implementation.** NG911 implementation underway to serve state / territory population.	Working to establish NG911 governance through state/territorial plan. • Developing GIS to be able to support NG911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • Planning to or have updated PSAP equipment to handle basic NG911 service offerings.	More than 75% of PSAPs and Population Served have: • NG911 governance established through state/territorial plan. • GIS developed and able to support NG911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • PSAP equipment updated to handle basic NG911 service offerings.	More than 90% of PSAPs and Population Served have: • NG911 governance established through state/territorial plan. • GIS developed and supporting NG911 call routing. • Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS). • PSAP equipment updated and handling basic NG911 service offerings.	
	16	**Data operability / interoperability.** Ability of agencies within a region to exchange data on demand, and needed, and as authorized. Examples of systems would be: - CAD to CAD - Chat - GIS	Agencies are able to share data only by email. Systems are not touching or talking.	Systems are able to touch but with limited capabilities. One-way information sharing.	Full system to system integration. Able to fully consume and manipulate data.	

		- Critical Incident Management Tool (- Web EOC)				
	17	**Future Technology/Organizational Learning.** SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)	☒LMR to LTE Integration ☒5G ☐IoT (cameras) ☐UAV (Smart Vehicles) ☒UAS (Drones) ☐Body Cameras ☒Public Alerting Software ☐Sensors ☐Autonomous Vehicles ☒MCPTT Apps ☐Wearables ☐Machine Learning/Artificial Intelligence/Analytics ☒Geolocation ☒GIS ☐Situational Awareness Apps-common operating picture applications (i.e. Force Tracking, Chat Applications, Common Operations Applications) ☐HetNets/Mesh Networks/Software Defined Networks ☐Acoustic Signaling (Shot Spotter) ☒ESInet ☒'The Next Narrowbanding' ☐Smart Cities			
Training & Exercises	**18**	**Communications Exercise objectives.** Specific emergency communications objectives are incorporated into applicable exercises Federal / state / territory-wide	Regular engagement with State Training and Exercise coordinators	Promote addition of emergency communications objectives in state/county/regional level exercises (target Emergency Management community).	Initial and Defined plus mechanism in place to incorporate and measure communications objectives into state/county/regional level exercises	

				Including providing tools, templates, etc.		
	19	**Trained Communications Unit responders.** Communications Unit personnel are listed in a tracking database (e.g. NQS One Responder, CASM, etc.) and available for assignment/response.	<49% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>50%<74% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>75%<100% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	
Usage	**20**	**Communications Usage Best Practices/Lessons Learned.** Capability exists within jurisdiction to share best practices/lessons learned (positive and/or negative) across all lanes of the Interoperability Continuum related to all components of the emergency communications ecosystem	Best practices/lessons learned intake mechanism established. Create Communications AAR template to collect best practices	Initial plus review mechanism established	Defined plus distribution mechanism established	
Outreach	**21**	**WPS subscription.** WPS penetration across state / territory compared to maximum potential	<9% subscription rate of potentially eligible participants who signed up WPS across a state / territory	>10%<49% subscription rate of potentially eligible participants who signed up for WPS a state / territory	>50%<100% subscription rate of potentially eligible participants who signed up for WPS across a state / territory	
	22	**Outreach.** Outreach mechanisms in place to share information across state	SWIC electronic communication (e.g. SWIC email, newsletter, social media, etc.) distributed to relevant stakeholders on regular basis	Initial plus web presence containing information about emergency communications interoperability, SCIP, trainings, etc.	Defined plus in-person/webinar conference/meeting attendance strategy and resources to execute	

Lifecycle	**23**	**Sustainment assessment.** Identify interoperable component system sustainment needs;(e.g. communications infrastructure, equipment, programs, management) that need sustainment funding. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased - state systems only)	< 49% of component systems assessed to identify sustainment needs	>50%<74% of component systems assessed to identify sustainment needs	>75%<100% of component systems assessed to identify sustainment needs	
	24	**Risk identification.** Identify risks for emergency communications components. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased. Risk Identification and planning is in line with having a communications COOP Plan)	< 49% of component systems have risks assessed through a standard template for all technology components	>50%<74% of component systems have risks assessed through a standard template for all technology components	>75%<100% of component systems have risks assessed through a standard template for all technology components	
All Lanes	**25**	**Cross Border / Interstate (State to State) Emergency Communications.** Established capabilities to enable emergency communications across all components of the ecosystem.	Initial: Little to no established: ☒Governance ☒SOPs/MOUs ☒Technology ☒Training/Exercises ☒Usage	Defined: Documented/established across some lanes of the Continuum: ☐Governance ☐SOPs/MOUs ☐Technology ☐Training/Exercises ☐Usage	Optimized: Documented/established across all lanes of the Continuum: ☐Governance ☐SOPs/MOUs ☐Technology ☐Training/Exercises ☐Usage	Technology and Usage are defined

APPENDIX B: LIST OF ACRONYMS

A&W	Alerts and Warnings
C3	Communications Consortium Chairs
CAC	Citizen Alerting Committee
CAD	Computer Aided Dispatch
CASM	Communication Assets Survey and Mapping Tool
COMU	Communications Unit
DDOS	Distributed-Denial-Of-Service Attacks
DHS	United States Department of Homeland Security
DPC	Disaster Preparedness Commission
ECD	Emergency Communications Division
ESInet	Emergency Services IP Network
EMAC	Emergency Management Assistance Compact
FirstNet	First Responder Network Authority
FOG	Field Operations Guide
GIS	Geographic Information Systems
IP	Internet Protocol
LMR	Land Mobile Radio
MHz	Megahertz
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
NPSBN	National Public Safety Broadband Network
NYSP	New York State Police
OCT	Office of Counter Terrorism
OIEC	Office of Interoperable and Emergency Communications
PSAP	Public Safety Answering Point
RMS	Records Management Systems
SCIP	Statewide Communication Interoperability Plan
SIEC	State Interoperable and Emergency Communication Board
SICG	Statewide Interoperable Communications Grant
SPTC	State Preparedness Training Center
STR	Strategic Reserve
SWIC	Statewide Interoperability Coordinator
TICFOG	Tactical Interoperable Communications Field Operations Guide
TICP	Tactical Interoperable Communications Plan